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Asiatic cholera : a

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ASIATIC CHOLERA

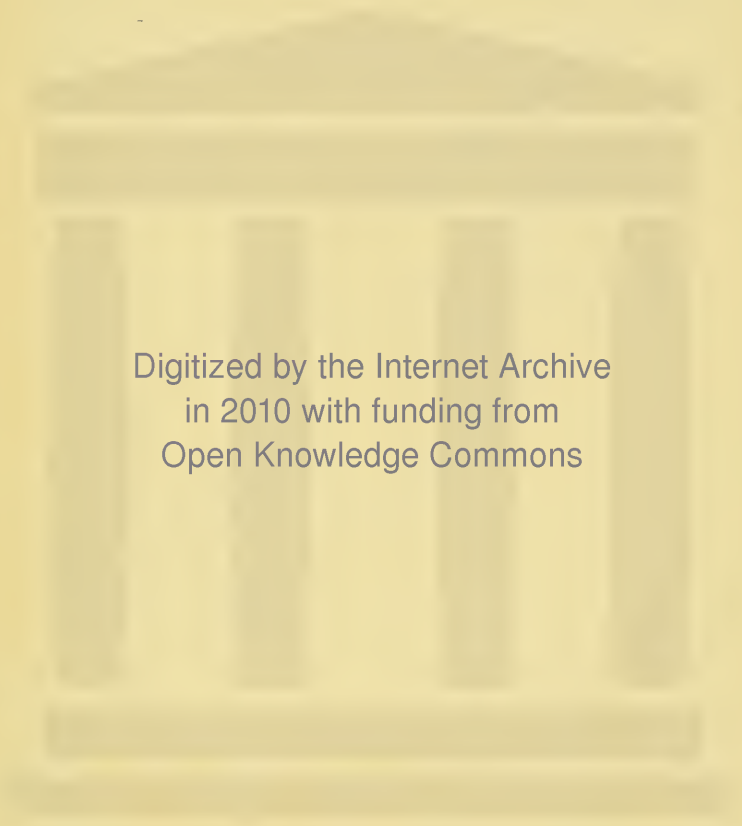
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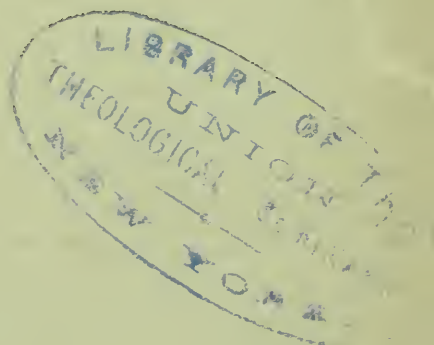
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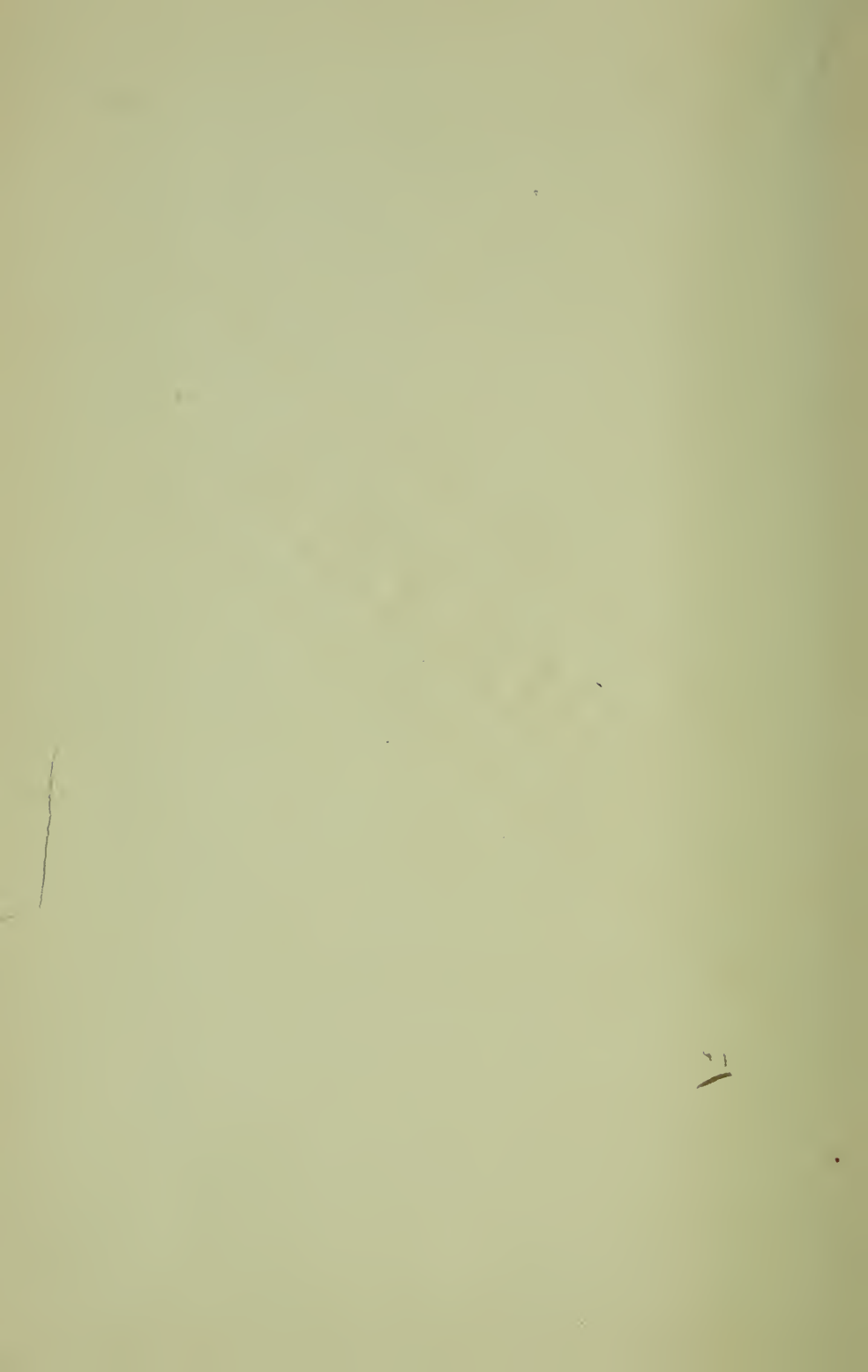
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ASIATIC CHOLERA

A SKETCH OF ITS

HISTORY, NATURE,

AND

PREVENTIVE MANAGEMENT.

BY

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ASIATIC CHOLERA.

SKETCH OF ITS HISTORY.

The following short summary of what is known of cholera is derived, for the most part, from the elaborate researches of John Macpherson, M. D., of London, and from the essays of Drs. McClellan, Woodworth, Peters, Stillé, and others.

It is one of the most ancient diseases of which distinct descriptions exist, and there are few disorders respecting which such an uninterrupted chain of evidence has been preserved. Celsus gives a clear account of it, A. D. 7; and indeed Hippocrates, B. C. 370, speaks, if not correctly, still with fair accuracy of the disease. Galen, A. D. 131, was quite aware of the gravity and antiquity of cholera, and gave directions upon how to prevent relapses. Almost every known writer in medicine up to the close of the year 1500 has described a disease attended with vomiting and purging of a serous character, attended by collapse and death after a brief interval, or a protracted convalescence and fever; but the communicable and migratory nature of the disease escaped notice or record.

When the Portuguese discovered a practical route to India by the way of the Cape of Good Hope, the more civilized nations of Europe were placed in direct communication with Hindostan, and we began at once to have clear records of Asiatic cholera.

In A. D. 1500, cholera was found to have been present in every place in the west coast of India where Europeans had an opportunity of observing the diseases of the country.

Sydenham, Willis and Martin speak of great epidemics of diarrhœas, accompanied by awful twitchings and cramps, as prevailing annually in London from 1666 to 1672. In the year

immediately preceding the great fire in London, when the sanitary condition of the city was horrible, this "plague in the guts" caused thousands of deaths.

In 1827-8 a severe epidemic raged in the northwest provinces of India and suddenly appeared near the Caspian Sea in 1829. On August 26, 1829, the first fatal case appeared in Russian territory, in the town of Orenburg, and from this case a fire was lighted which swept over Russia in 1829-30, reached England in 1831, and the United States in 1832. If there was any doubt regarding the character of the epidemics noted by Sydenham and Martin in England, referred to above, there is no question about the case reported by Dr. Dixon and seen by him Aug. 5, 1831, at Sunderland, twelve miles below New Castle, for here was a recognized case of malignant cholera as we understand it to-day, appearing in an epidemic form in the British Isles, and possibly the first. The sailors returning from Riga and St. Petersburg had brought home their chests of clothes, some of these chests belonging to comrades who had died in Russia, and which had not been opened since the clothes of the deceased had been placed in them.

In the majority of the published accounts of the cholera epidemic of 1832 in North America, the arrival of the ship Carricks at the Grosse Isle quarantine station on the St. Lawrence, upon the 3d of June, has been taken as the date of the advent of epidemic cholera upon this Continent. It is probable, however, that the Carricks was but one of the first arrivals of infected vessels. The quarantine records show that on the 28th of April the ship Constantia from Limerick reached Grosse Isle with one hundred and seventy emigrants, among whom twenty-nine cholera deaths had occurred during the voyage; that on the 14th of May the ship Robert arrived from Cork, having had ten deaths on board. The brig Carricks from Dublin anchored off the Isle on June 3d with emigrants, among whom forty-five deaths from cholera had occurred. Quebec and Montreal were

thus infected. From the St. Lawrence the epidemic was carried into the State of New York. On June 13 an emigrant who had left Montreal on the 8th died of cholera at Plattsburg. On the 14th another died at Burlington, and on the 15th an emigrant from Montreal died at White Hall.

On the evening of July 7, General Scott, on the steamer S. Thompson, reached Fort Mackinaw on his way to Chicago with troops from Buffalo. Four of the enlisted men died that evening with cholera. On the 10th he reached Fort Dearborn, and on the night of his arrival at Chicago six men died. Nearly every State in the Union suffered during this epidemic.

In 1834 cholera again appeared, and for the second time its advent was from the St. Lawrence, and in 1835 was introduced from Cuba. After these visitations, America enjoyed a cholera immunity of nearly thirteen years. In 1848, however, cholera had advanced in Europe to its western shores, and on the 2d of December of that year it appeared at the port of New York. The epidemic of this year was a mild one throughout the United States.

In 1854 the first appearance of cholera in this country was in Chicago among recently arrived emigrants, when, from the last week in April to December 1st, fourteen hundred and twenty-four deaths were recorded. From the large cities located upon the great thoroughfares the disease spread widely in every direction.

In November, 1865, cholera was brought to Ward's Island, N. Y., by the steamships Atalanta and Herrman. This infection had come out from India by way of the Red Sea to the Mediterranean, and by steamer and sail was carried from Bombay to Ward's Island in exactly nine months by an unbroken chain of connections. It was an atrociously malignant epidemic throughout the United States.

From February 9 to September 10, 1873, cholera appeared in nineteen States of the Union, appearing at New

Orleans on the first date mentioned. It was undoubtedly introduced by emigrants and their effects from the infected West Indies, and from New Orleans was distributed to the interior of the Continent by water-transportation.

NATURE OF THE CHOLERA POISON.

Logic as well as science is very positively pointing to some form of germ-life as the causal agent in propagating cholera. This germ has not been so authoritatively demonstrated as to receive the acceptance of the medical world, but there is no doubt that the students now laboring in this field of investigation will be able to show us the "physical thing" in the near future. The following series of propositions, condensed from a vast mass of facts, will state the case with sufficient clearness for the purpose intended.

I. Malignant cholera is caused by the access of a specific organic poison to the stomach and intestines; which poison is developed spontaneously only in certain parts of India.

II. This poison (outside of India) is contained primarily in the ejections—vomit and stools—of a person infected with the disease.

III. Favorable conditions for the growth of this poison, when once planted outside of the infected body, are found in ordinary water containing organic impurities, and in decomposing animal and vegetable matter.

IV. The dangerous properties of the poison may be preserved for an indefinite period in dried cholera ejections.

V. The dried particles of cholera poison may be carried in clothing, bedding, books, animal skins, etc., to any distance, and when liberated may find their way directly into the stomach through the medium of water or food, or, meeting the necessary conditions for growth and development outside the body (see III), it may reproduce itself to a limitless extent.

VI. The poison may be destroyed by disinfectants outside the body.

VII. It is not probable that the poison in cholera discharges is in a state or condition to become immediately active on ejection from the patient, but that it requires a further development outside the body to become infectious. In favoring conditions of heat and moisture the time required for this secondary development is short.

VIII. It is not probable that the cholera poison is wafted about in the atmosphere except to a very limited extent; but finds its way from sick to well by water or food, except in cases of very close contact, as the washing of infected clothing, etc.

The deductions which may legitimately be drawn from the foregoing, are of general applicability.

The importance of the liberal use of such chemical agents (disinfectants) as are known to destroy the poison in discharges from cholera patients is apparent.

In proposition VII the fact of the general immunity from infection of physicians and nurses who treat and properly care for cholera patients, is explained. It should be generally understood that the person sick from cholera can not communicate his disease to attendants if the discharges are properly disinfected, and if no soiled clothing, etc., be permitted to remain in conditions favoring the secondary development of the poison.

SYMPTOMS AND EARLY TREATMENT.

This little article is not designed as a "ready physician," and has no advice to offer concerning the treatment of cholera beyond this: That the most able assistance within reach and means of the sick should be immediately summoned. It seems proper, however, to refer to the importance of recognizing diarrhœa during epidemics of cholera as an early symptom of the disease, and to the simplest means of checking it in its early stages.

In the vast majority of cases in the milder epidemics the disease is ushered in by a passive, painless diarrhœa from one to

five days' duration. In more severe forms the patient in apparent perfect health passes, after a single dejection, into the stage of a well-defined cholera.

The active treatment of the premonitory diarrhœa is of the most pressing necessity in all cases, and it is the universal experience of the profession that, where this stage of the disease is properly managed, many cases of cholera are averted. The excreta from a patient suffering from this premonitory diarrhœa are as infectious as those from a completely developed cholera patient, and should be subjected to the same disinfecting treatment.

The neglect to thus treat dejections from mild and perhaps traveling cases, which may finally recover unrecognized, explains the transmission of the disease from place to place undetected.

Whatever else the person suffering from diarrhœa in cholera days proposes to do, he should at once place himself at rest. Without this nothing may avail, and if he neglects this, he may readily pass into the full-formed disease. Abstinence from all food, or at least except that of the blandest quality—as boiled rice—is desirable. A thick poultice of flax-seed meal or Indian-corn meal, spiced with mustard and applied to the abdomen hot as can be borne, is useful. The following remedy I know to be helpful in the conditions above referred to:

Take of Aromatic Sulphuric Acid,	1 ounce.
Tincture of Opium,	8 scruples.
Syrup of Ginger, sufficient to make	4 ounces.

Mix: Take 1 teaspoonful in a wine-glass of water every two or three hours until diarrhœa is checked.

The sulphuric acid fulfils two important indications: (1) It is a marked astringent, and (2) it is well known that the cholera poison thrives in alkaline conditions, within and without the body, and is retarded in its development—perhaps destroyed—

by acids. Dilute sulphuric acid is a perfectly safe and efficient agent with which to modify the alkaline secretions of the stomach and bowels.

PREVENTION OF CHOLERA.

Experience teaches that the safety of a community threatened with an outbreak of cholera is to be found in the full recognition of the importance of the following points:

1. Cleanliness of domicile and neighborhood—cleanliness in everything—destroys the food upon which the cholera poison thrives, and thus limits its activity.
2. Attention to individual habits during the continuance of the epidemic.
3. Disinfection.
4. The proper care of the sick.

CLEANLINESS.

The attention of each householder should be directed to the condition of his house and its surrounding premises. Debris of all kinds should be collected in a pile and destroyed by fire. Outhouses, as privies, stables, etc., should be inspected, cleaned, and disinfected. Dirty and damp cellars should be cleaned, ventilated and disinfected. Wet places should be made dry, and sunlight and air freely admitted everywhere.

In country places the water supply should be rigidly examined. The pollution of wells by drainage from privy vaults into which cholera dejecta have been thrown is one of the great sources of danger where wells are used; and, although this water *may* be of the most deadly character, the poison may exist in such form as to render it impossible to detect it by any means known to science to-day.

If wells are so situated that the possibility of impure drainage reaching them exists, they should be closed in such manner

as will absolutely prevent access to their contents. Roadside gutters and ponds and pools of stagnant water should be drained, cleaned and disinfected.

The general cleanliness of the house and surroundings, or neighborhood, having been secured, there remains to be noted

ATTENTION TO INDIVIDUAL HABITS.

While I would not advise any sudden and radical change in personal habits during cholera days, yet there can be no objection to a dirty man taking a bath; on the contrary, a thorough soaping of the body and a hot bath daily will secure the removal of what may and often does prove the nucleus of disease.

The surface of the body should at all times, both of the day and of the night, be fully and warmly protected. Whatever may suddenly check perspiration or induce a chilliness is dangerous, and should be avoided. A broad flannel bandage worn snugly around the person over the abdomen will impart a sense of comfort and a relief to the peculiar feeling in the abdomen so universally experienced during a cholera season.

All articles of food known to be indigestible, or not to agree with the individual, should be avoided. The digestive apparatus should be encouraged to the performance of its duty by the presence of good, well-prepared, wholesome food. Such ripe fruits and well-cooked vegetables as the individual habitually uses may be continued during a cholera epidemic, but the use of unripe fruit and badly-cooked vegetables, or those in which the process of vegetable decomposition has commenced, is dangerous. In cases of simple diarrhœa occurring during the continuance of the epidemic, *all* fruits and vegetables should be avoided until the digestive track has recovered its tone and function.

Experience has shown that a debauch of any kind predisposes to cholera when the disease is epidemic; but if the indi-

vidual has been accustomed to the use of wine, brandy or malt liquors, they may be continued in moderation.

DISINFECTANTS.

What vaccination is to small-pox, hygienic regulations are, in a large measure, to cholera. The rigid observance of a sound sanitary condition presents to this virulent disease a wall which is almost insurmountable. The foundation of this wall must be laid in disinfectants.

A disinfectant is an agent which destroys utterly and for all time the disease germ with which it comes in contact. It does more; it renders inert the products of decomposition of vegetable or animal matter upon which disease germs thrive.

A deodorizer may or may not be a disinfectant. Dry earth is a most valuable deodorizer, but it is not a disinfectant. Pasteur found the germs of splenic fever virulently active about the remains of a bullock dead of the disease and buried six feet deep for ten years. It should not be forgotten that to change or remove the odor from putrescent matter may have no influence whatever upon disease germs, if they happen to be present in the mass.

The agents used as disinfectants are very numerous, while many of them are either doubtful in their efficiency, or known to be absolutely worthless. Only those which are reliable, of easy access, and which may be popularly used, will be referred to.

All wet yards, cellars, etc., after being cleaned, should be treated to a covering of fresh unslaked lime, the lumps broken into pieces the size of a large walnut. Unslaked lime has a caustic property by which it destroys organic matter, as well as a powerful affinity for water, which renders it a valuable drying agent.

Woodwork in stables and cellars should have a coat of whitewash, into each pailful of which two ounces of sulphate of copper (first dissolved in a little hot water) have been thrown.

The sulphate of iron is a valuable general disinfectant, although it may not act promptly as destructive to the cholera poison. Dr. H. C. Wood says of it: "It is decomposed by ammonia, the oxide of iron, a persistent, powerful ozonizing agent, being precipitated. It slowly but persistently attacks organic matter about it, oxidizing it, and being reduced to a sulphide of iron."

The most advantageous use which can be made of this agent is as follows: Place a sound barrel in upright position, raised two or three feet from the ground, in some convenient place in barn or outhouse, and insert a *wooden* spigot four inches above the bottom of the barrel. Suspend in the barrel sixty pounds of sulphate of iron in a coarse gunny sack, and fill the barrel with soft water. This solution may be freely used in dirty gutters, or thrown into privy vaults and cesspools.

If a privy vault is foul and cannot be immediately cleaned, it should be treated as follows: Mix in a dry and covered place two parts of unslaked lime and one part of charcoal. Throw two or three shovelfuls of the mass upon the surface of an impure privy or cesspool, and in three hours add a pailful of the solution of sulphate of iron before mentioned. A large school vault, in daily use by a large number of persons, has been kept in perfect condition by this daily treatment. If the vault has received dejections from cholera patients, the above treatment is not sufficient to insure the destruction of the poison. In such cases the free use of fresh chloride of lime—twenty pounds to an ordinary vault—is advisable.

The iron solution should not be used to disinfect fabrics, as it colors them. Such articles of clothing, bedding, etc., as can be washed should first be treated in a solution of sulphate of zinc prepared as follows:

Sulphate of Zinc,	1½ pounds.
Common Salt,	¾ pound.
Hot Water,	6 gallons.

Soak all infected clothing, bedding, etc., in this solution for three hours, and then wash in boiling water.

The contents of infected beds, as feathers, hair, husks, moss, excelsior, etc., should be burned.

All rooms in which persons have been sick with cholera should be disinfected by sulphurous acid gas. Have all windows, fire-places, key-holes, doors, and other openings securely sealed by strips of paper pasted over them. Hang on lines or racks all carpets and material that can not be washed. Place an iron pot on two bricks or stones in the center of the room and throw into the pot some live (wood) coals, upon which place four pounds of crushed brimstone. If wood coals are not convenient, saturate the brimstone with alcohol and ignite. This amount will suffice for a room twenty feet square. The room should be kept tightly closed for twenty-four hours.

Corrosive sublimate is the cheapest, and probably the most efficient disinfectant known to science to-day. The only serious objection to its popular use is its great activity as a poison; but this fact need hardly be regarded as a special objection, for all disinfectants are more or less actively poisonous when accidentally used. Under the direction of the sanitary inspectors of Chicago there were used during many of the days of the past summer, in disinfecting privy vaults, 600 gallons a day of a solution of corrosive sublimate. It is soluble in sixteen parts of water, but this strength is not required for any disinfecting use. One pound of corrosive sublimate dissolved in 100 pounds of water, and the solution colored with enough permanganate of potassa to give it a purple tint, so that it can readily be distinguished from water, will cost less than one dollar, and should always be kept at hand near patients suffering from cholera. It is a neat, odorless and very efficient agent. Its proper use will be referred to when speaking of the care of the sick. This solution should not be kept in metal receptacles.

Chloride of lime is regarded by some authorities as the best disinfectant for treating the dejections of cholera, because of the

rapidity of its action. It is cheap, and if it be perfectly fresh, containing 25 per cent. of available chlorine, and is used in sufficient quantity, it is probably efficient. A solution may be made by dissolving eight ounces of chloride of lime in one gallon of soft water and keeping it in a close vessel.

The popular use of chloride of lime by placing a saucerful under beds, in hallways, under stairs, in water closets, etc., with the idea that it has a disinfecting influence, used in this manner, is a delusion. No apartment occupied by human beings can be disinfected, because disease germs are not destroyed in an atmosphere that can be respired.

CARE OF THE SICK.

It is the universal experience of sanitarians that the mild and undetected cases of cholera are the greatest source of danger to a community. The discharges from the bowels of a patient not yet confined to his bed are deposited wherever he happens to be; and, swarming as they are with cholera germs, which only need favoring conditions to develop a ferocious activity, they become so many foci of infection to the neighborhood.

I repeat again, that the individual suffering from cholera can not communicate the disease to those about him; but his discharges—or clothing, etc., soiled by his discharges—if not destroyed will, in the course of a few hours' exposure to the atmosphere, become a virulent source of infection to others. The important point, therefore, in the hygienic treatment of cholera is to destroy—and destroy absolutely—the poison in the discharges from the patient. If this be done, physicians, nurses, and attendants upon the sick generally escape the disease, and the community is protected.

No excreta of cholera patients should be emptied into water-closets or privy vaults, or even permitted to leave the bedside of the patient until thoroughly disinfected.

After each vomit or dejection one pint of the solution of corrosive sublimate or of chloride of lime should be thrown into the

vessel and intimately mixed with the discharge; it may be then carried from the house, and the vessel which contained them should be carefully washed with the same solution, and the water used for that purpose permitted to remain in the vessel for the next discharge. When the case has terminated, the floors, carpets, or other furniture that may have been soiled, should be carefully disinfected by burning brimstone, as pointed out above, and the mattress or bed soiled by discharges should be burned at once. All sheets, pillows, napkins, or other clothing soiled by discharges should be immediately thrown into the solution of zinc, or of corrosive sublimate, *and never, under any circumstances, taken from the room until thus immersed.* Should the case terminate fatally, the body should be placed in the casket upon a thick layer of sawdust *saturated* with corrosive sublimate solution, and the burial should not be delayed beyond the time necessary to assure the attendants that death has occurred.





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